ABSTRACT OF THE DISCLOSURE

The present invention pertains to methods of preparing prismatic cells which comprise the steps of winding lithium metal anode, separator, and cathode layers on a rounded mandrel having a large circumference relative to the external dimensions of the prismatic cell stack and of compressing the multilayer rounded cell stack into a prismatic shape and then filling the prismatic subassembly with electrolyte to form a prismatic ell stack, or alternatively of winding into such a rounded cell stack and filling with electrolyte and then compressing into a prismatic cell stack, prior to enclosing the prismatic cell stack in a barrier material film and sealing to form the casing of the prismatic cell. The present invention also pertains to electric current producing cells prepared according to such methods.